The European Nanotechnology Community Informatics Platform: Bridging data and disciplinary gaps for industry and regulators

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Overview

- H2020 research infrastructure project
  - Call Topic: *INFRAIA-01-2018-2019: Integrating Activities for Advanced Communities*

- Beneficiaries:
  - 10 countries worldwide
  - 14 partners:
    - 12 EU countries (academia + SME)
   - 2 US partners (academia)

EU NanoSafety Cluster & US NCI Work Group Nano

The NanoCommons consortium

The idea - problem & solution

- **Nanotechnologies** are a major area of **investment & growth for the European economy**

- Knowledge and **data** remain **fragmented** and inaccessible **hampering progress**

- **Read-across approaches are currently absent for NMs**, but would reduce the cost and time of nanosafety research and regulation
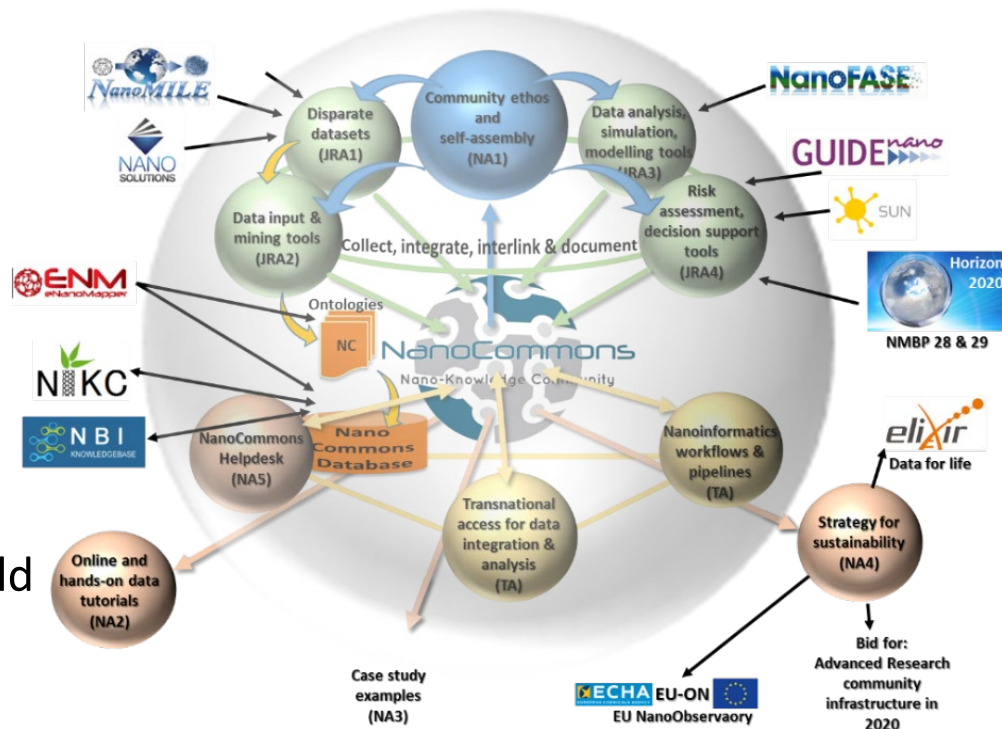
NanoCommons is creating an **e-infrastructure** for reproducible science, **enhancing data integration & enabling nanoinformatics workflows** to address these gaps

The offer

- NanoCommons **integrates the nanomaterials communities** around an agreed set of approaches for **data generation, data management and nanoinformatics** to support the risk and hazard assessment of NMs

- NanoCommons is **integrating and developing tools and services** for use by the nanomaterials communities

Experimental Workflows Design & Implementation

Data Processing & Analysis

Data Visualisation & Predictive Toxicity

Data Storage & Online Accessibility

- These tools and services can be **accessed** through the **NanoCommons Transnational Access scheme**

- NanoCommons provides **Trainings**, accessible through the **NanoCommons Infrastructure Platform**

Data FAIRness

- **To remove barriers** for nanosafety **regulatory and industry** processes

- To develop an **integrated knowledgebase** to facilitate development and application of regulatory tools such as **grouping & read-across**

- To create an **interconnected community** *via* a **FAIR data single market**

- To enable **full exploitation of EU-funded research data** & promotion of **data-driven innovation** leading to **positive socioeconomic impact**

Data-driven Innovation

Innovation

Wisdom

Intelligence

Knowledge

Information

Data

Data Driven Innovation
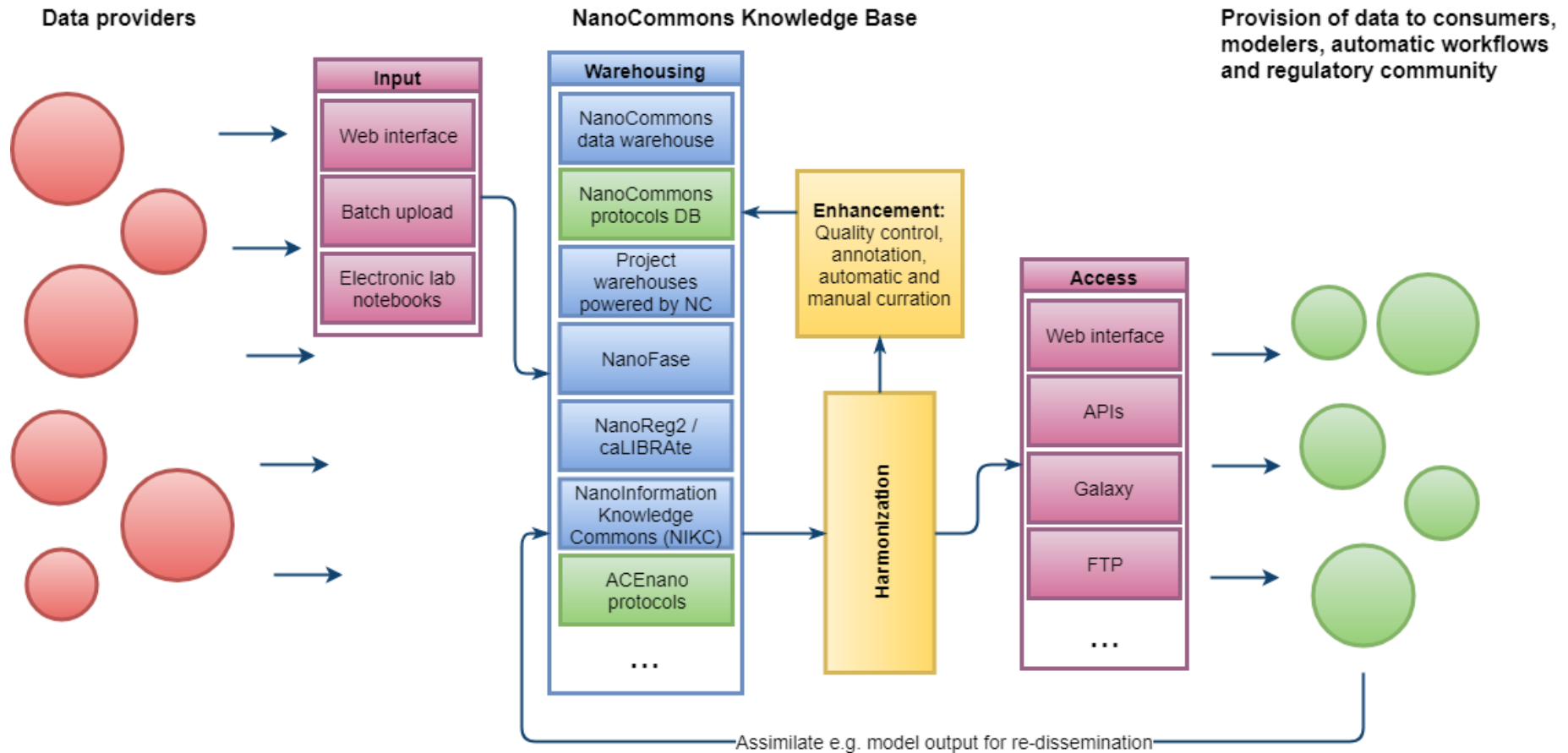
NanoCommons Platform

NanoCommons Platform

NanoCommons Knowledge Infrastructure

For access to
Services, Resources & Events:
☞ www.infrastructure.nanocommons.eu

TA Calls

- NanoCommons Transnational Access (TA) provides **funded access** to state of the art **nanoinformatics and data management tools and modelling and risk assessment services**, and the expertise to implement them successfully.

- Researchers from academia and industry are invited to access the **NanoCommons services, facilities and knowledge** to advance their work, solve problems and take their research to the next level

Experimental Workflows Design & Implementation

Automated data acquisition, online lab-books, data curation templates, nanoinformatics implementation

Data Processing & Analysis

From data cleansing, mining and analysis to modelling
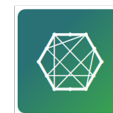
Data Visualization & Predictive Toxicity

Omics, QSARs, modelling and risk assessment tools

Data Storage & Accessibility

Data repositories, storage, harmonized and interoperable online access

TA Calls – *USER BENEFITS*

→ Support from technical experts in NMs data management & nanoinformatics:

- o Guidance on implementation of data management best practices (experimental design & data generation)

- o FAIR data

- o Data mining

- o Data harmonization (using ontologies and semantic mapping of datasets and databases)

- o Data utilization and re-utilization (including data visualization and predictive toxicology)

- o Model development

- o Data curation & quality assurance

- o Data Storage

NanoCommons Online Training Tools

TA service category	Nanoinformatics services	Training formats	Level
Experimental workflow	PC characterization protocols	Written tutorial	Basic
Data processing & analysis	Biomax data templates	Recorded webinar	Basic
	NIKC data templates	Written tutorial	Advanced
	Jaqpot platform	Demo video	Advanced
		Demo video	Expert
	Enalos NanoXtract for TEM image analysis	Demo video	Basic
		Online tutorial	Basic
	Biocorona *in silico* modelling	Recorded webinar	Advanced
	OpenRiskNet e-infrastructure	Recorded webinars incl. demo videos	Basic
		Recorded webinars incl. videos and documentations	Advanced
Data visualization & toxicity prediction	Enalos cloud for zeta potential	Demo video	Basic
		Recorded webinar	Basic
	Enalos cloud for Safe-by-Design	Demo video	Basic
		Online tutorial	Basic
	GUIDEnano		
Data storage	SciNote		
	ACEnano Knowledge		

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Added Values for Users

➢ Access to the **latest protocols** and **best practices** for NMs PC characterisation for safety assessment

➢ Access to **associated data capture templates** fully annotated to **community-agreed ontologies** and **integrated with databases and repositories**

➢ Support by experts:
  o Online Transnational Access (TA) calls
  o Case studies / Helpdesk service

NEXT CALL:
March 2020 rolling

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Contact us if you have any questions or queries

We would be happy to help you!

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